

**SSSC COMMUNITY WORKSHOP
REGISTERED PARTICIPANTS
AS OF 12 NOVEMBER:**

First Name: Brian

Last Name: Anderson

Affiliation: JHU/APL

Poster: yes

Poster Description: AMPERE: Auroral Magnetosphere Polar Electrodynamics Response Explorer

Understanding the dynamics of the magnetosphere-ionosphere (M-I) system during geomagnetic storms is perhaps the greatest challenge in M-I science both because of its interest scientifically and because of its importance for space weather. Because of the dynamics of the system during these events the fact remains that despite major efforts expended in distributed observation systems we have not made observations that allow us to quantitatively characterize the dynamics and evolution of the storm-time M-I system. The Iridium constellation of seventy satellites provides an unprecedented opportunity to perform global scale, accurate specification of the field aligned currents linking the ionosphere and magnetosphere with a ten minute cadence. The Iridium satellites are distributed in 780 km circular polar orbits in six orbit planes spaced two hours in local time and therefore constitute an ideal system to measure the global Birkeland current system. Iridium magnetometer data!

Data from Iridium have been obtained for engineering purposes at coarse time resolution since February 1999 for scientific study. This data set has been used to validate the data and the processing/analysis techniques we have developed. It is possible to increase the sampling rate from each satellite from the current 200 seconds/sample by two orders of magnitude. This quantum level upgrade will transform the Iridium magnetometer data dramatically increasing the robustness of the inversions and allowing a

accurate tracking of the global Birkeland current circuit with ten minute time resolution in true real time. The resulting global Birkeland currents, accurate to 5% - 15%, will provide the key observational input required to revolutionize our understanding of the storm-time M-I system. The AMPERE mission is a nearly zero risk opportunity to achieve unprecedented scientific return for M-I science and space weather.

First Name: Laila

Last Name: Andersson

Poster: no

Poster Description:

First Name: Juan
Last Name: Ayon
Affiliation: Jet Propulsion Laboratory/Caltech
Poster: no

First Name: Daniel
Last Name: Berdichevsky
Affiliation: L3 Government Services
Poster: yes
Poster Description: The Travelling Shocks; The Local and Global Aspect
We present multiple spacecraft observations of fast forward driven interplanetary shocks and discuss their in-situ, remote sensed aspects and present a consistent global scenario, supported with 1.5 and 3D MHD modeling of the shocks.

First Name: Pietro
Last Name: Bernasconi
Affiliation: JHU / Applied Physics Laboratory
Poster: yes
Poster Description: Title: Solar Climate Explorer
Description: A concept space mission dedicated to Solar Irradiance Studies. The main questions that the mission aims to answer are: What is the Total Solar Irradiance Really? What causes it, how it varies and what are its effects on Earth Climate? In order to answer these questions we need a direct and accurate characterization of all the thermal structures (magnetic and non magnetic) that contribute to the TSI. Therefore this mission will especially focus on imaging the solar irradiance. The spacecraft will be equipped with a minimum suite of 3 instruments. The main instrument will be a bolometric imager capable of accurately measuring the broad-band contrast (from the UV to the NIR) of solar features with a resolution of at least 5 arcseconds. The second instrument will be a radiometer to provide context to the contrast images and contribute to the ongoing monitoring of the TSI. The third instrument will be a Spectral Irradiance Imager (either an imaging spectro-photometer! or a photometric filtergraph with broad-band filters at various key wavelengths). The mission lifetime will be of at least 6 years or preferably 11 years to cover a full solar cycle.

First Name: Dieter
Last Name: Bilitza
Affiliation: Raytheon ITSS
Poster: no
Poster Description:

First Name: Scott
Last Name: Boardsen
Affiliation: NASA/GSFC/L-3 Comm., GSI Inc.
Poster: no

First Name: Pontus C.
Last Name: Brandt
Affiliation: The Johns Hopkins University Applied Physics Laboratory
Poster: yes
Poster Description: Low-altitude ENA imaging

First Name: Jay
Last Name: Bookbinder
Affiliation: SAO
Poster: yes
Poster Description: The RAM Mission: Mission Overview and Technology status

First Name: Joe
Last Name: Borovsky
Affiliation: Los Alamos National Laboratory
Poster: yes
Poster Description: Magnetosphere-Ionosphere Observatory: Understanding the Role of the Aurora in the Sun-Earth Connection

First Name: Leonard
Last Name: Burlaga
Affiliation: NASA/GSFC
Poster: no
Poster Description:

First Name: Michael
Last Name: Calabrese
Affiliation: GSFC/SGT, Inc.
Poster: no

First Name: Kenneth
Last Name: Carpenter
Affiliation: NASA's GSFC
Poster: yes
Poster Description: The Stellar Imager (SI) Vision Mission

First Name: Jim
Last Name: Chase
Affiliation: JPL
Poster: no
Poster Description:

First Name: David
Last Name: Chenette
Affiliation: Lockheed Martin Advanced Tech Center
Poster: no
Poster Description:

First Name: Jonathan
Last Name: Cirtain
Affiliation: Harvard-SAO & Montana State University
Fax:
Poster: no

First Name: Helmut
Last Name: Cline
Affiliation: Swales Aerospace
Poster: no
Poster Description:

First Name: Michael
Last Name: Collier
Affiliation: NASA/GSFC
Poster: no
Poster Description:

First Name: Rachel
Last Name: Connolly
Affiliation: American Museum of Natural History
Poster: yes
Poster Description: Hot Twon, Summer in the City. Solar Experiences in New York City at the American Museum of Natural History.

First Name: steven
Last Name: curtis
Affiliation: GSFC/NASA
Poster: no
Poster Description:

First Name: Janine
Last Name: Daughters
Affiliation: JPL
Poster: no
Poster Description:

First Name: Joseph
Last Name: Davila
Affiliation: GSFC
Poster: yes
Poster Description: DISCO -- A Coronagraph for Solar Probe

First Name: John
Last Name: Davis
Affiliation: MSFC
Poster: yes
Poster Description: MTRAP: The Magnetic Transition Region Probe.

First Name: Craig
Last Name: DeForest
Affiliation: Southwest Research Institute
Poster: yes
Poster Description: Three posters:

(1) Fluxon MHD Modeling for a Brighter Tomorrow

Fluxons are a new, semi-Lagrangian representation of MHD that is being developed at Southwest Research Institute and Montana State University with funding from the LWS program. Fluxon models explicitly track topology in the modeled MHD system, eliminating numerical resistivity. Fluxon models scale very well compared to conventional MHD models, and may offer multiple order of magnitude improvement in speed and fidelity over conventional MHD models in large systems that contain current sheets, such as solar active regions, CMEs, the global corona, or the global heliosphere. We report on the status and direction of fluxon model development.

(2) Mission Concept: The Solar Chromospheric Rapid Imaging Balloon Experiment (SCRIBE). The upper chromosphere harbors several hundred - several thousand W/m^2 in MHD waves at frequencies above 50 mHz. These waves are important for the stability and

heating of coronal structures and the solar wind, but are extremely difficult to measure using existing instrumentation. We present a mission concept for a balloon-borne high speed Doppler/Magnetograph that will image the Sun in Carbon 3, generating intensity, Doppler, and Zeeman images of the Sun at ~ 1 Hz to study these dynamic effects in the "magnetic transition zone" under the corona.

(3) Magnetic Feature Tracking to Drive MHD Models: Driving semi-empirical MHD models to predict space weather requires artificial vision to interpret the structure of the photospheric magnetic field. We present the latest results from the Southwest Automated Magnetic Imaging Suite (SWAMIS), an artificial vision package developed at SwRI with funding from NASA.

First Name: Brian

Last Name: Dennis

Affiliation: NASA Goddard Space Flight Center

Poster: yes

Poster Description: RHESSI X-ray and Gamma-ray Observations of Solar Flares

First Name: Michael

Last Name: Desch

Affiliation: NASA/Goddard

Poster: yes

Poster Description: WIND Poster

First Name: Benjamin

Last Name: Diedrich

Affiliation: NOAA/NESDIS Office of Systems Development

Poster: no

Poster Description:

First Name: Mary
Last Name: DiJoseph
Affiliation: NASA
Poster: yes
Poster Description: SSSC Roadmap engineering study processs

First Name: Tim
Last Name: Eastman
Affiliation: QSS Group, Inc.
Poster: no
Poster Description:

First Name: Omar
Last Name: Eaton
Affiliation: STP/LWS EPO
Poster:
Poster Description:

First Name: Evelina
Last Name: Felicite-Maurice
Affiliation: STP/LWS EPO
Poster: yes
Poster Description: STP/LWS Education and Public Outreach

First Name: JOSEPH
Last Name: FENNELL
Affiliation: AEROSPACE CORP
Poster: no
Poster Description:

First Name: Richard
Last Name: Fisher
Affiliation: NASA HQ
Poster: no
Poster Description:

First Name: Bernhard
Last Name: Fleck
Affiliation: European Space Agency
Poster: no
Poster Description:

First Name: Harald
Last Name: Frey
Affiliation: Space Sciences Laboratory
Poster: no
Poster Description:

First Name: David
Last Name: Fritts
Affiliation: Colorado Research Associates/NWRA
Poster: yes
Poster Description: WAVES MIDEX
The desire to fly a mission to target specifically the generation of gravity waves in the lower atmosphere, their propagation to higher altitudes, and their influences in the mesosphere, thermosphere, and ionosphere has motivated a number of previous SMEX and MIDEX proposals. A mission that would be especially timely and relevant to current NASA goals in the context of the Sun-Earth Connections program is the motivation for this poster.

First Name: Mei-Ching
Last Name: Fok
Affiliation: NASA Goddard Space Flight Center
Poster: no
Poster Description:

First Name: Nicola
Last Name: Fox
Affiliation: JHU/APL
Poster: yes
Poster Description: Co-presenting LWS/Geospace poster with David Sibeck and Joe Grebowsky. Title and description already submitted by Sibeck

First Name: Shing
Last Name: Fung
Affiliation: Space Physics Data Facility, Code 632
Poster:
Poster Description:

First Name: Thomas
Last Name: Gaeng
Affiliation: L3-Com
Poster: no
Poster Description:

First Name: Gregory
Last Name: Garbe
Affiliation: NASA/Marshall Space Flight Center
Poster: yes
Poster Description: The Space Weather In-Situ Monitors (SWIM),
Improved Science Capabilities using Solar Sail Propulsion
The understanding of space weather is paramount in the ability of mankind to explore the solar system. Such an understanding requires the systematic quantifying of the essential properties and thereby lead to the ability to predict and eventually forecast this phenomenon. The Space Weather In-situ Monitors (SWIM) will provide the next step in this process. SWIM will enable unique measurement abilities due to its solar sail propulsion system's ability to position its pair of satellites at a variable measurement baseline sunward of the Lagrangian point. The initial configuration will be to place the "point" sailcraft at its maximum sunward position ($\sim 470 R_E$ from Earth) while the second sailcraft, the "flank", would be stationed at fixed position downstream. The relative offset distance, elevation angle and azimuth angle between the point and flank sailcrafts, (R, θ_R, ϕ_R) , could vary by $(10 R_E < R < 200 R_E, -30^\circ < \theta_R < 30^\circ, -45^\circ < \phi_R < 45^\circ)$.

First Name: Manolis
Last Name: Georgoulis
Affiliation: JHU/APL
Poster: yes
Poster Description: The Near Infrared Chromosphere Observatory (NICO)
The scientific goal of NICO is to determine the magnetic structure and sources of heating in the solar chromosphere. Understanding chromospheric heating is a prerequisite to understanding one of the greatest puzzles in solar physics, namely, the high temperature of the solar corona. NICO, a balloon-borne observatory, has unprecedented spatial and temporal resolution. It uses a 80-cm diameter Cassegrain telescope, one of the largest solar telescopes ever flown, and massive on-board, recoverable, data storage to map magnetic fields, velocities, and heating events in the

solar chromosphere and photosphere. NICO will study both strongly magnetized active regions and weakly magnetized network regions. NICO's mission is important to the Sun-Earth Connection initiative, because the chromosphere radiates the brightest emission features in the extreme ultraviolet portion of the spectrum, including the H I Lyman series and the He I and He II lines and continua. This emission produces the majority of the ionization and heat input to Earth's mesosphere and thermosphere. Moreover, NICO's multi-height vector magnetic field measurements will allow definitive knowledge of the three-dimensional (3D), ambiguity-free, magnetic field vector in the solar atmosphere, and will enable the calculation of the respective velocity field vector, thus upgrading our ability to construct realistic 3D models of the coronal magnetic field and to calculate the magnetic energy and helicity budgets of the magnetized solar corona. NICO will be based on the Flare Genesis Experiment (FGE), which obtained the first vector magnetograms from space or near-space environment. NICO will also be a leader in demonstrating vitally needed technologies, such as wavefront sensing for monitoring telescope alignment; high-speed image motion compensation; and wide aperture Fabry-Perot filters for extended spectral scanning. As a sub-orbital mission, NICO will serve as a test bed for a future space mission.

First Name: Parminder
Last Name: Ghuman
Affiliation: NASA/GSFC
Poster: yes
Poster Description: Technologies relevant to SSSC

First Name: Barbara
Last Name: Giles
Affiliation: NASA Headquarters
Poster: no

First Name: Jesper
Last Name: Gjerloev
Affiliation: JHU-APL
Poster: yes
Poster Description: The global magnetometer network initiative: SuperMAG
Abstract: We present the SuperMAG initiative. Performing global studies utilizing ground magnetometer data from many different institutions is currently complicated by the use of different coordinate systems and baseline determination techniques. While the former causes an impediment for the user the latter can prevent studies from being performed. There is currently a need for a community data-service in which these obstacles are removed thereby enabling the investigator to focus his/her time on the research rather than the data processing. In the SuperMAG initiative these issues are taken care of and the user can take full advantage of the unique temporal and spatial coverage provided by the ground based magnetometers. We present the coordinate sy

stem, the objective automated baseline technique, and an overview of the data-products that will be provided.

First Name: Richard
Last Name: Goldberg
Affiliation: NASA/Goddard
Poster: no

First Name: Melvyn
Last Name: Goldstein
Affiliation: NASA Goddard Space Flight Center
Poster: no
Poster Description:

First Name: Leon
Last Name: Golub
Affiliation: Harvard-Smithsonian CfA
Poster: yes
Poster Description: The RAM Probe
Describes the Reconnection and Microscale Probe endorsed in the 2002 Roadmap.

First Name: Charles
Last Name: Goodrich
Affiliation: Boston University
Poster: no
Poster Description:

First Name: Nat
Last Name: Gopalswamy
Affiliation: NASA/GSFC
Poster: no
Poster Description:

First Name: Joseph
Last Name: Grebowsky
Affiliation: NASA GSFC
Poster: yes
Poster Description: GEC (Geospace Electrodynamic Connections)- A Mission to the Threshold of Earth's Atmosphere

First Name: Mike
Last Name: Gruntman
Affiliation: USC
Poster: no
Poster Description:

First Name: Lika
Last Name: Guhathakurta
Affiliation: NASA HQ
Poster: no
Poster Description:

First Name: Joseph B.
Last Name: Gurman
Affiliation: NASA Goddard Space Flight Center
Poster: no

First Name: Don
Last Name: Hassler
Affiliation: Southwest Research Institute
Poster: yes
Poster Description: High Cadence Spectral Imaging with the RAISE (Rapid Acquisition Imaging Spectrograph) Sounding Rocket program

Poster #2 - Poster Description: A Space Weather Doppler Imager Mission to support NASA's Exploration Initiative

Poster #3 - Poster Description: The Radiation Assessment Detector (RAD) to Support Future Exploration Missions

First Name: Matthew
Last Name: Hill
Affiliation: University of Maryland
Poster: yes
Poster Description: Explore the Heliosheath: Voyager Interstellar Mission
There are significant scientific benefits and a ripe opportunity to ensure a robust mission of exploration and discovery in the heliosheath.

First Name: George
Last Name: Ho
Affiliation: Johns Hopkins University Applied Physics Laboratory
Poster: no
Poster Description:

First Name: Charles
Last Name: Holmes
Affiliation: NASA HQ
Poster: yes
Poster Description:

The Next Generation Deep Space Network: Meeting the Needs of Future Science and
Exploration Missions

Barry Geldzahler, Science Mission Directorate
National Aeronautics and Space Administration

Douglas S. Abraham, Leslie J. Deutsch, Robert A. Preston
Jet Propulsion Laboratory, California Institute of Technology
Under contract with the National Aeronautics and Space Administration

NASA's Deep Space Network (DSN) is evolving to meet the communication and navigation needs of increasingly complex, data-intensive space science and exploration missions. Solar system exploration missions, for instance, are focusing more on long-duration orbital remote sensing at increasing spatial, spectral, and temporal resolutions. Such missions are also conducting more elaborate *in situ* investigations – with short-lived probes being superseded by multiple, long-lived, mobile robotic explorers. Meanwhile, solar and astrophysical missions are moving from low-Earth-orbit, single-spacecraft observatories to multi-spacecraft observatories operating in more distant Earth-trailing and Lagrange point orbits. In the coming decades, human missions will play a key role in exploring the Moon and, eventually, Mars – with human involvement in deploying and upgrading solar and astrophysical observatories also being considered for this time frame. Analysis of NASA's roadmap missions suggests that, over the next 25 years, these various changes will drive both robotic and human downlink rates up by a factor of at least 1,000 – even from the more distant regions of our solar system. Robotic uplink rates will likely increase by a factor of at least 100, human uplink rates by about 10,000 (driven by greater software/information upload requirements). In addition, human exploration safety considerations will place a premium on the reliability of the associated links. At the same time, the trend toward multi-spacecraft missions will likely cause a doubling in the number of such links back to Earth. And, the increasingly diverse set of navigation scenarios associated with all these missions will generate demand for navigation accuracies and timeliness well beyond today's levels. To meet these challenges, the DSN is transforming its network of large antennas to a hybrid network of

large arrays of small antennas, optical communications terminals, and, at destinations undergoing intensive exploration, relay satellites. It is also developing more capable spacecraft communications components and systems and is exploring more accurate navigation techniques. All of these capabilities are being designed to play together in a seamless, cost-effective manner, providing 21st century missions with a 21st century DSN.

First Name: Regan
Last Name: Howard
Affiliation: Orbital Sciences Corp
Poster: no
Poster Description:

First Name: Russell
Last Name: Howard
Affiliation: Naval Research Lab
Poster Description:

First Name: cheryl
Last Name: huang
Affiliation: air force research laboratory
Poster: yes
Poster Description: TBD

First Name: Bernard
Last Name: Jackson
Affiliation: CASS/UCSD
Poster: yes
Poster Description: A Heliospheric Imager for the 3D Reconstruction of Space Plasma Density
Following the Solar Mass Ejection Imager (SMEI) heritage, we have designed a white-light heliospheric imager (HI) capable of reconstructing interplanetary density globally around a spacecraft. HI is intended to compliment solar instruments such as ultraviolet and X-ray imagers that measure the solar corona directly sunward of the spacecraft, a solar coronagraph that primarily views to the solar limbs, and in-situ spacecraft instruments that measure the structures in which the spacecraft is immersed. The instrument can not only bridge the gap between near-Sun solar observations and the far heliosphere, but by using simple assumptions about heliospheric expansion can connect these near-Sun observations to the in-situ monitors on the spacecraft and provide them context information. We present a light-weight working 0.5 AU HI model that can be scaled to operate efficiently from locations as distant from the Sun as 1 AU and in Earth orbit to as close to the Sun as 5 solar radii.

First Name: Michael
Last Name: Johnson
Affiliation: NASA Goddard Space Flight Center
Poster: yes
Poster Description: Low Power Microelectronics Initiatives at NASA

First Name: John
Last Name: Johnston
Affiliation: NASA GSFC
Poster: no
Poster Description:

First Name: Stuart
Last Name: Jordan
Affiliation: Goddard Space Flight Center
Poster: no

First Name: Michael
Last Name: Kaiser
Affiliation: NASA/Goddard Space Flight Center
Poster: no
Poster Description:

First Name: Margarita
Last Name: Karovska
Affiliation: Harvard-Smithsonian Center for Astrophysics
Poster: no
Poster Description:

First Name: John
Last Name: Keller
Affiliation: Goddard Space Flight Center
Poster: yes
Poster Description: Lunar Surface and Atmosphere Spectrometer - A Method for Mapping the Structure and Composition of the Lunar Atmosphere using Pickup Ions

First Name: Alex
Last Name: Klimas
Affiliation: NASA GSFC
Poster: yes
Poster Description: The Magnetospheric Constellation Mission

First Name: James
Last Name: Klimchuk
Affiliation: Naval Research Lab
Poster: no

First Name: David
Last Name: Klumpar
Affiliation: Montana State University
Poster: yes
Poster Description: Breaking the Cost Barrier for Constellation-class Microsatellites

At a few University laboratories, microsatellites (1 to 30 kg class) are being designed and built at a fraction of the cost of typical satellites. A design philosophy that builds upon acceptance of risk, can result in substantial cost savings in design and fabrication of individual satellites. The concept becomes more compelling when applied to certain types of constellation missions that can be failure tolerant to the loss of a few members of the fleet. We describe two satellite architectures designed and under construction within the Space Science and Engineering Laboratory at Montana State University. One is a 1-3 kg satellite that uses a generic launch dispenser for orbit insertion. The second is a 30-kg class satellite designed for more conventional secondary launch. Both satellites are being designed, built and tested and will be flown at a small fraction of the cost of most satellites.

First Name: John
Last Name: Kohl
Affiliation: Harvard-Smithsonian CfA
Poster: yes
Poster Description: Title: Spectroscopic Diagnostics of Solar Wind, CME and SEP Source Regions

Brief description: Spectroscopic diagnostic capabilities for characterizing the source regions of the solar wind, CMEs, and SEPs will be described. The potential use of the results for constraining theoretical models and identifying physical processes that control the generation of these phenomena will be provided. Examples of remote sensing instrumentation capable of carrying out the required measurements will be presented.

First Name: Marsha
Last Name: Korose
Affiliation: NGIT/TASC
Poster: no

First Name: Alexander
Last Name: Kosovichev
Affiliation: Stanford University
Poster: yes
Poster Description: Helioseismic Imaging of the Solar Interior
Description: This poster presents scientific objectives and approaches for probing the structure and dynamics of the Sun's interior by helioseismology, understanding the basic mechanisms of solar activity, and developing diagnostic and predictive methods.

First Name: Therese
Last Name: Kucera
Affiliation: NASA/GSFC
Poster:
Poster Description:

First Name: Peter
Last Name: Landecker
Affiliation: Northrop Grumman
Poster: no

First Name: Guan
Last Name: Le
Affiliation: NASA/GSFC
Poster: yes
Poster Description: NANOSAT CONSTELLATION TRAILBLAZER
FOR SPACE TECHNOLOGY 5 (ST-5)

First Name: Paulett
Last Name: Liewer
Affiliation: JPL
Poster: yes
Poster Description: Vision Mission Study: Solar Polar Imager- Observing Solar Activity from a New Perspective

First Name: Jun
Last Name: Lin
Affiliation: Harvard-Smithsonian Center for Astrophysics
Poster: no
Poster Description:

First Name: Robert
Last Name: MacDowall
Affiliation: NASA GSFC
Poster: yes
Poster Description: Solar Imaging Radio Array (SIRA): Imaging the corona and inner heliosphere at frequencies < 15 MHz
SIRA is a multispacecraft constellation designed to perform aperture synthesis imaging of low frequency (< 15 MHz) solar and other radio emissions. Below this frequency, ground-based observations are not possible due to the ionospheric cutoff. The prime goal of SIRA will be tracking radio emissions from CMEs and CME driven shocks from the Sun to 1 AU. No previous mission has made such imaging observations. SIRA will be submitted to the next MDEX opportunity.

First Name: Laura
Last Name: Madachy
Affiliation: STP/LWS EPO
Poster:
Poster Description:

First Name: Paul
Last Name: Mahaffy
Affiliation: NASA Goddard
Poster: yes
Poster Description: Neptune Orbiter with Probes Vision Mission Study

First Name: Barry
Last Name: Mauk
Affiliation: Johns Hopkins APL
Poster: yes
Poster Description: Auroral Multi-Scale: AMS: A mission to unmask the dynamical nature of magnetosphere-ionosphere coupling processes.

B. H. Mauk and B. J. Anderson

Description: The mission comprises four spacecraft flying in formation through the mid-altitude M-I coupling region supported by on-board auroral UV imaging. Its objective is to understand the electrodynamic connection between Earth's ionosphere and magnetosphere. It addresses fundamental physical processes involved in the electrical forcing between different regions of astrophysical plasmas. It targets a missing element in NASA's SEC quest to understand how the Earth and the Planets respond to Solar variations. The four spacecraft make coordinated measurements of the current density, the net potential, and the responsible kinetic processes while supported by on-board auroral UV imaging.

First Name: David
Last Name: McComas
Affiliation: Southwest Research Institute
Poster: yes
Poster Description: Solar Probe-Science and Technology Definition Team Update

First Name: Frank
Last Name: McDonald
Affiliation: IPST
Poster: no
Poster Description:

First Name: Richard
Last Name: McEntire
Affiliation: JHU/APL
Poster: no

First Name: Robert
Last Name: McGuire
Affiliation: NASA
Poster: no

First Name: Scott
Last Name: McIntosh
Affiliation: Southwest Research Institute, Space Studies Department
Poster: yes
Poster Description: Will present the results of the Solar Imaging Spectroscopy working Group at Pre-Roadmap Workshop in Huntsville

First Name: Ralph
Last Name: McNutt
Affiliation: Johns Hopkins University Applied Physics Laboratory
Poster: yes
Poster Description: INNNOVATIVE INTERSTELLAR EXPLORER
This is a Space Science Vision Mission Study selected under NASA NRA-03-OSS-01 for study of an interstellar probe propelled by Radiosotope Electric Propulsion (REP). The goal is to reach a heliocentric distance of ~200 AU within ~15 years with a focused payload for accomplishing priority outer heliosphere and local interstellar medium science.

First Name: Don
Last Name: Mitchell
Affiliation: JHU/APL
Poster: yes
Poster Description: HEO Stereo Magnetospheric Imager
Measurement Strategy:
Two high altitude spacecraft with global ENA and EUV imaging magnetosphere, and high resolution global spectroscopic FUV imaging of the I-T system
Ground radar and LEO S/C measurements coordinated with Mission-Specific HEO measurements
Science Objectives:
Determine dynamic coupling between ionosphere and magnetosphere
Determine how magnetospheric energy is dissipated in the Ionosphere-Thermosphere (I-T) system
Determine the important feedback mechanisms from the I-T system to the magnetosphere
Determine global magnetospheric dynamics
Mission Description
Mission Design
2 High Altitude Spacecraft in 8Re circular polar orbit
2 year life
Payload
FUV, EUV, ENA Imaging instruments on each S/C, nadir pointing Coordinated, funded component to analyze and integrate ground base (radar, all-sky camera, magnetometer, GPS) and LEO S/C measurements

First Name: Edward
Last Name: Montgomery
Affiliation: NASA MSFC
Poster: no
Poster Description:

First Name: Jeff
Last Name: Morrill
Affiliation: Naval Research Laboratory
Poster: no
Poster Description

First Name: SAUMITRA
Last Name: MUKHERJEE
Affiliation: THE UNIVERSITY OF LIVERPOOL
Poster: yes
Poster Description: INFLUENCE OF SUNSPOTS ON TRIGGERING EARTHQUAKE

First Name: ANITA
Last Name: MUKHERJEE
Affiliation: THE UNIVERSITY OF LIVERPOOL
Poster: yes
Poster Description: INFLUENCE OF SUNSPOTS ON UV VARIATION ON
FOCUSSED EARTH PORTIONS.

First Name: Ronald
Last Name: Muller
Affiliation: QSS Group, Inc.
Poster: no

First Name: Patricia
Last Name: Mulligan
Affiliation: NOAA
Poster: no
Poster Description:

First Name: Neil
Last Name: Murphy
Affiliation: JPL
Poster: yes
Poster Description: The L1 diamond - Turbulence Observations in Space and Time
[Ayon et al.]

First Name: norman
Last Name: ness
Affiliation: Bartol Research Institute
Poster: no
Poster Description:

First Name: Carolyn
Last Name: Ng
Affiliation: NASA's Sun-Earth Connection Education Forum
Poster: yes
Poster Description: TBD with Jim Thieman and team, possibly on
1) Sun-Earth Connection Education Forum and Sun-Earth Days
2) Student Observation Network

First Name: Sten
Last Name: Odenwald
Affiliation: GSFC/QSS - SECEF
Poster: no
Poster Description:

First Name: Keith
Last Name: Ogilvie
Affiliation: NASA/GSFC
Poster: yes
Poster Description: WIND Poster

First Name: Ronald
Last Name: Oliverson
Affiliation: NASA - GSFC
Poster: no
Poster Description:

First Name: Chris
Last Name: Paranicas
Affiliation: Applied Physics Lab
Poster: yes
Poster Description: Title: \"The Polar Magnetosphere of Jupiter\"
Description: Missions to Jupiter, relevant science, comparative magnetospheres

First Name: Michael
Last Name: Pasciuto
Affiliation: NASA
Poster: no
Poster Description:

First Name: Steven
Last Name: Petrinec
Affiliation: Lockheed Martin ATC
Poster: no

First Name: larry
Last Name: paxton
Affiliation: jhu/apl
Poster: yes
Poster Description: MARS - the Mars Atmosphere Remote Sensing mission
MARS is a Scout-class mission to Mars to explore the aeronomy of the Mars atmosphere.

First Name: Simon
Last Name: Plunkett
Affiliation: Naval Research Laboratory
Poster: no

First Name: Kenneth
Last Name: Potocki
Affiliation: JHU/APL
Poster: yes
Poster Description: Solar Probe-Engineering Status

First Name: Patricia
Last Name: Rainey
Affiliation: The Boeing Company
Poster: no
Poster Description:

First Name: Nelson
Last Name: Reginald
Affiliation: CUA
Poster: yes
Poster Description:
Poster #1 NEXUS
Poster #2: An Interplanetary Imager for Sentinels

First Name: Michael
Last Name: Reiner
Affiliation: Catholic U & GSFC
Poster: no
Poster Description:

First Name: john
Last Name: richardson
Affiliation: MIT
Poster: no
Poster Description:

First Name: Aaron
Last Name: Roberts
Affiliation: NASA GSFC
Poster: yes
Poster Description:
Virtual Observatories in Space and Solar Physics
Many of the new challenges in SSSC physics will involve the integration of many data sets that now reside in disparate repositories in many formats. These will need to be integrated with models for a complete understanding. A new paradigm is emerging, starting with an analogy to the astronomical "Virtual Observatories," to unite space and solar physics data and models through community-based and "market-driven" tools that use the Internet to make data and model finding, access, and use easy and efficient. A recent

workshop (Greenbelt, 27-29 October 20004) has helped to unify the approach, and NASA is giving these efforts increasing financial support. Other agencies and countries have been working similar projects. Here we provide an update and suggestions for how these ideas should be included in the new roadmap.

First Name: Kenneth
Last Name: Rock
Affiliation: Boeing
Poster: no
Poster Description:

First Name: Edmond
Last Name: Roelof
Affiliation: Johns Hopkins U/Applied Physics Lab.
Poster: yes
Poster Description: The Telemachus Mission: A global view of the Sun and the three-dimensional structure of the heliosphere
The Roadmap 2003 Telemachus Mission updated in the context of recent scientific results

First Name: J.
Last Name: Rumburg
Affiliation: NASA
Poster: no
Poster Description:

First Name: James
Last Name: Russell
Poster: no
Poster Description:

First Name: Alexander
Last Name: Ruzmaikin
Affiliation: Jet Propulsion Laboratory
Poster: yes
Poster Description: Title: Multiangle Imaging of the Sun
Description: We propose an advanced mission concept to reveal the sources of solar activity deep inside the Sun, and to study the development of activity on the solar surface. Three-dimensional thermal and dynamic structures in the convection zone, includ

ing near-polar regions, are reconstructed by correlating spacecraft orbiting the Sun and Earth-side Doppler signals from acoustic wave packets traversing deep solar layers. Magnetic images reveal the development of active regions over the entire solar surface, and allow the separation of spatial and time changes. The spacecraft goes around the Sun along a near-circular orbit at 0.72 AU carrying a simultaneous Doppler-magnetic imager. Within 1.4 years it delivers Doppler and magnetic images of the Sun taken at Earth-Sun-spacecraft angles from 30 to 330 degrees. The mission addresses central goals of NASA's Sun-Earth Connection themes: understanding the mechanisms of solar variability and providing a scientific basis for predicting Space Weather.

First Name: Kenneth
Last Name: Schatten
Affiliation: ai-solutions
Poster: no

First Name: Karel
Last Name: Schrijver
Affiliation: Lockheed Martin Adv. Tech. Ctr.
Poster: yes
Poster Description: The Stellar Imager Vision Mission

First Name: Nathan
Last Name: Schwadron
Affiliation: Southwest Research Institute
Poster: yes
Poster Description: Heliospheric Imager and Galactic Observer (HIGO)

HIGO is our first step into the interstellar medium and window onto the primordial solar system. The mission will (1) determine the 3-D structure and temporal evolution of the interaction region between the heliosphere and the local galactic environment, (2) determine the nucleosynthetic status of a present-day sample of the galaxy and explore the implications of this knowledge for Big Bang cosmology, galactic evolution, stellar nucleosynthesis, and the birthplace of the Sun, and (3) discover the inner edge of the outer source and its implications for the primordial sources of mass and composition to the inner solar system, (4) search for molecules and the building blocks of life in the sputtered and sublimated material left by comets and dust in the heliosphere and interstellar medium and (5) study through direct measurement the acceleration processes active in the region between 4 and 10 AU where shocks and subsequent particle acceleration is its most

active in the heliosphere. These goals will be achieved by sending the spacecraft near 3-4 AU, where the heliospheric boundaries may be imaged using Energetic Neutral Atoms (ENAs) and heliospheric EUV emissions. Instruments will sample pickup ions produced (1) from the neutral galactic matter that propagates through the heliosphere, thereby determining isotopic and elemental composition of the Local Interstellar Medium and (2) from the outer source grains and small comets that pervade the heliosphere. Instruments will directly sample the seed populations of particle acceleration at the strong shocks formed in our heliosphere beyond 4 AU and 10 AU. The major neutral components of the interstellar gas will be directly sampled to provide more accurate measurements of the temperature and bulk flow velocity of the local interstellar gas.

First Name: Alana
Last Name: Sette
Affiliation: Smithsonian Astrophysical Observatory
Poster: no
Poster Description:

First Name: Gerald
Last Name: Share
Affiliation: Naval Research Laboratory
Poster: no

First Name: David
Last Name: Sibeck
Affiliation: NASA/GSFC
Poster: yes
Poster Description: The LWS Geospace Missions
The poster describes the scientific objectives and planned implementation of forthcoming LWS Geospace missions: the Radiation Belt Storm Probes, the Ionosphere-Thermosphere Storm Probes, and an FUV imager on a mission of opportunity.

First Name: Howard
Last Name: Singer
Affiliation: NOAA Space Environment Center
Poster: no
Poster Description:

First Name: James
Last Name: Slavin
Affiliation: NASA GSFC
Poster: no
Poster Description:

First Name: David
Last Name: Smith
Affiliation: Physics Dept., U. C. Santa Cruz
Poster: yes
Poster Description: High-Energy Radiation Suite for Sentinels: Particle Acceleration at the Sun
This poster, supported by a large collaboration, will discuss the motivations for, and implementation of, a set of x-ray, gamma-ray and neutron instruments for the Sentinel fleet to study particle acceleration at the Sun during flares.

First Name: Steven
Last Name: Smith
Affiliation: NASA - GSFC
Poster: no
Poster Description:

First Name: DENNIS
Last Name: SOCKER
Affiliation: NRL
Poster: no

First Name: Jim
Last Name: Spann
Affiliation: NASA
Poster:
Poster Description: presenting results of imaging workshop

First Name: Thomas

Last Name: Spilker

Affiliation: Jet Propulsion Laboratory

Poster: yes

Poster Description: Outstanding Science in the Neptune System From an Aerocaptured Vision Mission

Descr: Vision Mission study of a Neptune Orbiter mission. Includes 3-year + tour of the system with a large range of solar longitudes & latitudes, full sampling of magnetic latitudes.

First Name: Chris

Last Name: St. Cyr

Poster: yes

Poster Description: LWS Program

First Name: Leonard

Last Name: Strachan

Affiliation: Harvard-Smithsonian Center for Astrophysics

Poster:

Poster Description: as coauthor only (Kohl et al.)

First Name: Steven

Last Name: Suess

Affiliation: NASA-MSFC-NSSTC

Poster: yes

Poster Description: The Strategic Importance of the Ulysses Mission

First Name: Gary

Last Name: Swenson

Affiliation: University of Illinois

Poster: yes

Poster Description: Thermospheric Waves Explorer (TWEX)

A mission whos objective is to understand and quantify gravity wave forcing of the Thermosphere-Ionosphere system on a global scale.

First Name: Adam
Last Name: Szabo
Affiliation: NASA Goddard SFC
Poster: yes
Poster Description: Sentinels,
Mid-Heliospheric Great Observatory

First Name: Roger J.
Last Name: Thomas
Affiliation: NASA/GSFC
Poster: yes
Poster Description: "Imaging UV/EUV Spectrometers with EVLS Gratings" -- Some
design concepts I've developed for ESA's Solar Orbiter mission.

First Name: Barbara
Last Name: Thompson
Affiliation: NASA GSFC
Poster: yes
Poster Description:
Poster #1 SDO
Poster #2: IHY

First Name: Azita
Last Name: Valinia
Affiliation: NASA GSFC
Poster: no
Poster Description:

First Name: Tim
Last Name: Van Sant
Affiliation: NASA Goddard
Poster: no

First Name: Tycho
Last Name: von Rosenvinge
Affiliation: NASA/GSFC
Poster: no
Poster Description:

First Name: Angelos
Last Name: Vourlidas
Affiliation: Naval Research Laboratory
Poster: no

First Name: Marsha
Last Name: Walker
Affiliation: Gray Research, Inc. Systems Analysis
Poster: no
Poster Description:

First Name: Mitch
Last Name: Watkins
Affiliation: STP/LWS EPO
Poster:
Poster Description:

First Name: rachel
Last Name: weintraub
Affiliation: nasa gsfc
Poster: yes
Poster Description: SSSC Media Visualization 2004 Products

First Name: Rick
Last Name: Wesenberg
Affiliation: GSFC/NASA
Poster: no
Poster Description:

First Name: Stephen
Last Name: White
Affiliation: University of Maryland
Poster: no

First Name: Meredith

Last Name: Wills-Davey

Affiliation: SwRI

Poster Description: Global Coronal Seismology: Waves as a Tool for Measuring Coronal Properties

Using information from high-cadence observations of coronal pulse waves, it is possible to apply "global coronal seismology" to determine local plasma properties in regions through which the wave passes. Automated wave detection software will allow us to extract multiple parameters from EUV observations of coronal pulse waves, including velocity vectors and density enhancement cross-sections. By applying a valid theoretical description of the wave, these parameters can be used to measure the properties of the affected plasma. Variations on this technique are already being applied to observations of coronal loop oscillations; by applying it to pulse wave s, however, it will be possible to "map" density variations globally across the quiet Sun.

First Name: Chin-Chun

Last Name: Wu

Affiliation: CSPAR/University of Alabama in Huntsville

Poster: yes

Poster Description: Flare generation Shock evolution and Geomagnetic Storms during the 29 october - 02 November 2003

First Name: Jie

Last Name: Zhang

Affiliation: George Mason University

Poster: no

Poster Description:

First Name: Xiaoyan

Last Name: Zhou

Affiliation: Jet Propulsion Laboratory

Poster: yes

Poster Description: Title: "High-Altitude Long-Duration Ballooning: Observations of the Dayside and Conjugate Aurora Using IR Camera"

This poster presents an idea of observing the dayside and conjugate aurora using near infrared cameras onboard high-altitude (above 40 km) long-duration (long than two weeks) balloons. At altitudes 40 ñ 50 km, the signal and noise ratio is ~0.2 to 0.8 for the N2+ emission (at ~1100 nm wavelength). A complementary observation from balloons flying above the Antarctic and from ground-based cameras at the Arctic will

provide a unique opportunity to see the conjugate aurora. The science highlight of the proposal is to study processes at the dayside magnetopause, which controls the entry of solar wind plasma mass, energy and momentum into the magnetosphere and ionosphere. This goal is achieved via examining the dayside and conjugate aurora that is caused by the solar wind dynamic pressure discontinuity and magnetic reconnection.

First Name: Thomas

Last Name: Zurbuchen

Affiliation: University of Michigan

Poster: yes

Poster Description: The Interstellar Probe

This is a report of a vision mission study focusing on a nuclear powered interstellar probe mission.